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An Overview of Current Trends in the Treatment of Androgenetic Alopecia

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ABSTRACT

Androgenetic alopecia (AGA) occurs in men and women, and is characterized by the loss of hair from the scalp in a defined pattern. Determining factors appear to be genetic predisposition coupled with the presence of sufficient circulating androgens. Of the many treatments available for androgenetic alopecia, only two (finasteride and minoxidil) have been scientifically shown to be useful in the treatment of hair loss. Androgen-dependent processes are predominantly due to the binding of dihydrotestosterone (DHT) to the androgen receptor (AR). DHT-dependent cell functions depend on the availability of weak androgens, their conversion to more potent androgens via the action of 5alpha-reductase. However, these therapies are variable in their effectiveness. Discovery of the involvement of the AR gene, and the identification of other genes contributing to the condition, might lead to the development of new and more effective therapies that target the condition at a more fundamental level. However the advances in the DNA technology and bioinformatics had revealed some information regarding the genetic influence of AGA which will reveal more information in near future and possibly a permanent cure by gene therapy. Surgical procedures such as hair transplantation had advanced to a modified technique follicular unit extraction (FUE) with more patient compliance and acceptability. Over the past several years there has been great interest in the potential role of laser/light-based treatments for male and female pattern hair loss. This article provides an overview of the underlying mechanisms of AGA and the current and developing treatment strategies.

Keywords: Androgenetic alopecia, finasteride, minoxidil, dihydrotestosterone, AR gene.
